



United States Department of the Interior

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(UT-0322)

December 19, 2006

MEMORANDUM

To: Utah Field Supervisor, Ecological Services, U.S. Fish & Wildlife Service,
Salt Lake City Utah

From: Field Manager, *William Hunter*

Subject: Environmental Assessment and Biological Assessment for the Oil Shale
Research, Development, and Demonstration Project, White River Mine,
Uintah County, Utah (EA #UT-080-2006-280).

The draft Environmental Assessment/Biological Assessment for the Oil Shale Research, Development, and Demonstration Project (OSEC Project) (EA #UT-080-2006-280) was sent to your office in April 2006, for review and comment. Informal consultation, through phone calls and meetings, has been conducted between this office and the Service during the comment period for this EA/BA.

Attached is the final EA/BA for the OSEC Project. Pursuant to Section 7 of the Endangered Species Act of 1973, and in conformance with 50 CFR 402.12, the Vernal Field Office is requesting concurrence with the determinations made for the threatened, endangered and candidate species evaluated in the EA/BA and conclude formal consultation for this project.

Project Overview

OSEC proposes to conduct the RD&D Project at the existing White River Mine site in Uintah County, Utah (Figure 1-1). The RD&D Project is designed to demonstrate, through three separate phases of work, the technical, economic, and environmental feasibility of the recovery of synthetic crude oil from oil shale. OSEC's activities at the White River Mine site will involve one federal RD&D lease of 160 acres (referred to as the "160-acre lease area"). This lease area is within the area of the 5,120-acre Tract Ua of the 1974 Federal Prototype Oil Shale Leasing Program. The project will also require rights-of-way for power, a natural gas pipeline, water lines, and existing roadways outside of the 160-acre lease area. The roadways and proposed locations of the rights-of-way are also shown on Figure 1-1. The natural gas pipeline and power line rights-of-way will be necessary for the third phase of the project. As shown on Figure 1-1, there are two alternative rights-of-way for the natural gas

pipeline (a western route and an eastern route). The western natural gas pipeline route, roughly following Rt. 45, is the route included in the proposed action. The eastern route is included as an alternative. The 160-acre lease area and the proposed utility rights-of-way are referred to as "the Project Area" in this EA/BA.

Phase 1 of the RD&D Project involves the collection of a bulk sample (approximately 1,000 tons) of oil shale from an existing stockpile within the White River Mine 160-acre lease area for initial process testing in Calgary, Alberta, Canada. The oil shale sample will be crushed at a gravel pit in Uintah County and then transported by truck to Calgary. The oil shale will be processed in a 4-ton/hour ATP pilot plant operated by UMATAC Industrial Process. UMATAC Industrial Processes, a division of UMA Engineering Ltd., is the company that develops, manufactures and licenses the use of the ATP retort. Approximately 650 bbl of raw shale oil will be produced in Phase 1. OSEC will document the results of the process work, and associated tests and analyses (including shale oil yield; shale oil quality; the geochemistry, geotechnical and engineering properties of the spent shale; and air emissions), at the completion of the pilot plant work in Calgary.

Phase 2 of the RD&D Project will involve mobilizing the UMATAC 4-ton/hour ATP processor pilot plant and associated equipment from Calgary to the White River Mine lease area. Following reassembly of the pilot plant, OSEC will begin processing oil shale and producing raw shale oil, using shale feed sourced from an existing surface stockpile on the lease area. During this phase, OSEC also plans to reopen the existing underground White River Mine and begin mining fresh shale for use as retort feed during the latter part of Phase 2. Approximately 10,000 tons of oil shale will be processed during Phase 2, resulting in approximately 6,000 bbl of raw shale oil. OSEC will document the results of the pilot test work and will use these results as design criteria for the Phase 3 demonstration-scale study.

Phase 3 of the RD&D Project will involve the design, permitting and construction of a 250-ton/hour ATP demonstration plant to operate within the lease area. The mine will be sufficiently developed to support the mining of 1.5 million tons/year of oil shale, which will be used as feed for the operation of the ATP plant. Following construction and commissioning, the ATP plant will process an estimated 2.7 million tons of oil shale feed and generate approximately 1.8 million bbl of raw shale oil over a two-year operational test period.

OSEC recognizes that other companies with retort technologies might be engaged in similar research and demonstration activities and that these technologies might prove viable over time. To that end, OSEC has offered to supply White River Mine oil shale feedstock to other oil shale research and demonstration projects. As indicated in its application to BLM for the RD&D lease, OSEC will initially supply oil shale to other oil shale research groups, as may be requested, from the existing 50,000 tons of stockpiled oil shale on the surface of the White River Mine leasehold. It will supply this oil shale for pickup at the mine at OSEC's cost of loading the oil shale into a truck. Once OSEC reopens the mine, it is proposing to supply newly mined oil shale for pickup to other research projects at OSEC's cost plus a reasonable rate of return.

We request concurrence on the determinations summarized below for the following species:

Uinta Basin Hookless Cactus (*Sclerocactus glaucus*)-T; Graham's Beardtongue (*Penstemon grahamii*)-PT; White River Beardtongue (*Penstemon scariosus* var. *albifluvis*)-C; and, Ute ladies'-tresses (*Spiranthes diluvialis*)-T

Construction of the utility lines under the Proposed Action may affect the following plant species: Graham beardtongue (*Penstemon grahamii*), Uinta Basin hookless cactus (*Sclerocactus glaucus*), Ute ladies'-tresses (*Spiranthes diluvialis*), and White River beardtongue (*Penstemon scariosus* var. *albifluvis*). The SMA has analyzed the 160-acre lease site and found no evidence of habitat for these plant species (Green River formation outcrops or riparian/wetland areas) for any of these species. Similarly, BLM survey data indicate that the proposed utility rights-of-way do not currently contain known populations of T&E plant species.

Because plants can migrate into new areas, the applicant is committed to conduct field surveys for each of the four Federally-listed threatened and endangered plant species that has potential habitat along the proposed utility rights-of-way. Following consultation with BLM VFO personnel, these surveys will be conducted during the appropriate survey windows prior to construction. They will be carried out no more than one year prior to the commencement of construction in a particular area to determine their presence or absence. If populations are found, consultations with the BLM/USFWS will be conducted to determine an appropriate alternative route.

If T&E species are found along the utility line ROWs, construction impacts could include injury to, or destruction of, the plants and habitat and/or seed displacement during clearing, pipeline trenching, pole placement, or general vehicle and equipment movement along the ROWs. Populations located adjacent to the ROWs could be impacted by erosion, accidental deposition of materials during grading and trenching, and changes in surface runoff patterns. Existing plants could be killed or injured, new plants could be prevented from germinating, and the soil seed bank could be buried or removed. Permanent habitat loss could occur due to construction in previously undisturbed areas. Utility rights-of-way can contribute to habitat fragmentation which could result in pollinator and seed dispersal disruptions. Vehicle traffic and construction activities could create dust that can affect plants by reducing their vigor and reproduction capabilities. Noxious weed infestations resulting from construction could out-compete populations of T&E plants. Therefore, the applicant is committed to avoid construction through populations of T&E plant species unless topographic or other environmental constraints make it impossible to avoid them.

The applicant is committed to install the proposed natural gas pipeline beneath the White River using HDD techniques. Every effort will be made to conduct all drilling activities associated with the pipeline installation in the already disturbed areas of the floodplain adjacent to the Highway 45 bridge crossing. The power line will span the river and floodplain with poles located in upland areas. Thus, construction will avoid impacts to any potential habitat for the Ute-ladies' tresses. Although no wetland habitat will be directly destroyed by project activities, withdrawal of water, either from the river itself or from the White River alluvium could slightly reduce water levels in the river. However, the potential reduction in water levels is very low and within the range of natural-occurring variations, therefore, no impacts to potential habitat for this orchid are expected.

Following the completion of utility line construction and alluvial well drilling, disturbed areas will be restored and seeded in a timely manner following procedures outlined in the invasive, non-native species, vegetation, and wetland/riparian zone sections of this EA/BA.

With implementation of the preceding applicant-committed measures, construction and operation of the Proposed Action will have a **“may affect” but is “not likely to adversely affect”** Uinta Basin hookless cactus. The proposed action **may affect but is not likely to lead to federal listing** of Graham beardtongue and White River beardtongue. In addition, the proposed action will have **“may affect, not likely to adversely affect”** determination for Ute ladies'-tresses.

Bald Eagle (*Haliaeetus leucocephalus*) – T

Bald Eagles are winter residents in most areas of Utah (Sibley, 2000). Areas of concentrated use are closely associated with larger bodies of water as they mainly feed on fish and waterfowl (NatureServe 2006). However, other habitats may be used if food resources, such as rabbit or deer carrion, are readily available. Bald eagles tend to use traditional communal roosts located in mature trees. The proposed ROWs cross only a few areas near rivers or streams where large trees such as cottonwood (*Populus* spp.) would be encountered. There is a low possibility that foraging habitat would be impacted by water withdrawals from the White River by reducing habitat for fish spawning and wetland areas that support waterfowl. This could result in smaller numbers of fish and waterfowl available for bald eagle to consume, increasing their reliance on carrion. However, in winter carrion is a highly utilized food source.

Bald eagles may be impacted by the construction of new power lines. Impacts could include electrocution and collision with power lines resulting in injury or death.

Impacts of the Proposed Project on bald eagles are “may affect not likely to adversely affect bald eagles” because eagles typically utilize carrion in addition to fish and waterfowl in the winter. Furthermore, there are few nesting pairs in the entire state of Utah (only four identified in 2000) (SU, NR, DWR, 2006). No bald eagles or their nests were observed within 0.5 mile of the 160-acre site or the utility rights-of-way during raptor surveys conducted in the spring of 2006.

The applicant is committed to comply with stipulations for bald eagles as called for by the BLM VFO and in the applicable resource management plan (RMP). In addition, the applicant will comply with the requirement for consultation with the US Fish and Wildlife Service (USFWS) for bald eagles.

There are no raptor prescriptions in Book Cliffs RMP (1985). On a site-specific basis, conditions of approval have been developed for proposed actions that are similar to those found in the Diamond Mountain RMP (1994).

Pre-construction clearance surveys will be conducted in the spring prior to construction to identify active bald eagle nests within one mile of the project site and ROW and in winter to identify active bald eagle roosts within 0.5 mile of the project site and ROW. BLM-approved biologists will be required to meet with BLM biologists prior to initiating surveys, and will conduct surveys using BLM protocols. Construction activities will not occur within a 0.5

mile of any active bald eagle nest from January 1 through August 31 and within 0.5 mile of any active roosting sites from November 1 through March 31.

By complying with the BLM VFO prescriptions, the project effects to bald eagles are considered “**may affect not likely to adversely affect**” as a result of the Proposed Action.

Humpback chub (*Gila cypha*)-E; Bonytail (*Gila elegans*) -E; Colorado pikeminnow (*Ptychocheilus lucius*)-E; and, Razorback sucker (*Xyrauchen texanus*)-E

Activities on the 160-acre lease site will have no direct impact on T&E fish species since there are no permanent streams or rivers on the lease site.

Construction of the western natural gas pipeline under the White River would not directly affect the four Colorado River basin T&E fish species. The applicant is committed to use horizontal directional drilling (HDD) to install pipe beneath the White River channel. In addition, the proposed power line will span the river, thereby avoiding any potential impacts.

The surface water or ground water withdrawals associated with Phase 3 of the proposed project (whether through surface water withdrawals, or wells in the Birds Nest Aquifer or the White River alluvium) will result in very slight reduction (less than 0.3%) of total flow volume in the White River. However, any reduction in flow is considered a depletion of water from the Colorado River Basin as defined by the USFWS. Any depletion is automatically deemed by the USFWS to “likely...jeopardize the continued existence of the Colorado pikeminnow, humpback chub, bonytail chub, and razorback sucker and result in destruction or adverse modification of their critical habitat” (“may affect”). Therefore, all proposed activities on BLM-managed lands that result in water depletion, trigger a formal Endangered Species Act, Section 7 consultation with the USFWS (Chart, 2006). Phase 3 of the Proposed Action will use an average of 220,000 (gallons of water per day (gpd) for 2 years (with an estimated peak usage of 380,000 gallons per day). Based on a 365 day per year operating schedule, this would result in a depletion of approximately 247 acre feet per year. All depletions that exceed 100 acre feet per year are subject to a one-time contribution to the Recovery Program.

The applicant is committed to minimize impacts to Colorado River basin T&E fish species in accordance with USFWS requirements. The Biological Opinion on the Proposed Action will provide “Reasonable and Prudent Alternatives” that the USFWS gives for all projects that deplete water. The reasonable and prudent alternative which allows the project proponent to offset the impacts caused by the depletion is a one-time monetary contribution to the Recovery Program for these species.

If alluvial wells are installed within the 100-year floodplain, there may be additional effects to the four T&E fish species. Impacts could include increased sedimentation while drilling the wells and constructing supporting structures (roads, pipelines, etc.). Increased sedimentation could reduce the quality of spawning beds for the fish and areas, such as springs, for macroinvertebrates that fish feed upon to reproduce. The applicant is committed to implementation of erosion and sediment control measures and the project SPCC Plan to limit any affects of alluvial well installation and operation on T&E fish species in consultation with the BLM and USFWS.

If direct surface water withdrawal is chosen for supplying some or all of the Phase 3 water requirements, impacts could include sucking juvenile fish into the water intake resulting in death. Measures taken to eliminate impacts will include using intake screens to keep juvenile fish from being sucked into the intake and placing the intake in active water where juveniles do not congregate.

Even though the applicant will comply with USFWS requirements, the Proposed Action will have a **“may affect, likely to adversely affect”** impact on Colorado River basin T&E fish species.

Should you have questions, or require additional information, please contact Amy Torres, Wildlife Biologist, at 435-781-4481.

Thank you for your assistance.